



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

999 18th STREET - SUITE 500  
DENVER, COLORADO 80202-2466

APR - 6 1998

Ref: 8P2-W-GW

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Ms. Kathy Turner  
Petroleum Engineering Technician  
Petroglyph Operating Company, Inc.  
P. O. Box 1839  
Hutchinson, Kansas 67504-1839

RE: **UIC MINOR PERMIT MODIFICATION**  
**Conversion of Additional Well to**  
Antelope Creek Waterflood  
EPA Area Permit UT2736-00000  
Duchesne County, Utah

Dear Ms. Turner:

Your letter of March 20, 1998, requesting that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood, as authorized under EPA Area Permit #UT2736-00000 is hereby granted.

<u>NAME</u>	<u>LOCATION</u>	<u>EPA WELL PERMIT NO.</u>
<i>Ute Tribal #30-15</i>	SW/SE Section 30 T 5 S - R 3 W Duchesne County, UT	<b>#UT2736-04446</b>

This additional well is within the boundary of the existing area permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made by minor permit modification according to the terms and conditions of that permit. Unless specifically mentioned in this Minor Permit Modification, all terms and conditions of the original permit will apply to the construction, operation, monitoring, and plugging and abandonment of this additional injection well. The proposed well location, well schematic, conversion procedures, plugging and abandonment plan and schematic, submitted by your office, have been reviewed and approved as follows:

- (1) The **conversion** of this production well has been reviewed, and found satisfactory, therefore, no corrective action is required.

*Well ID 2387*



Printed on Recycled Paper



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RE: UIC MINING  
Conversion  
Antelope  
EPA Area  
Duchesne

*Scan under*  
*UT 20736 - 000000*  
*66*  
*Modification - minor*  
*mod approved*  
*04/06/1998*  
*Will need to link with*  
*UT 20736 - 04446 in*  
*new database also under*  
*8/ Add Well to Area*  
*Permit.*

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- (2) **Maximum injection pressure (Pmax)** - the permittee shall limit the maximum surface injection pressure (Pmax) to 2023 psig. Permit provision have been made that allow the operator to request an increase or decrease in the injection pressure.

The calculations for the fracture gradient was estimated from instantaneous shut-in pressures (ISIP) observed during fracturing treatments performed on five (5) individually fraced zones within the Ute Tribal #30-15 well. The lessor (two) of the five ISIP's was used to calculate the theoretical maximum allowable surface injection pressure as shown below:

$$P_{max} = [F_g - 0.433 (S_g)] d$$

Where:  $P_{max}$  = Maximum surface injection pressure at wellhead

$d$  = 4496' shallowest perforations after conversion

$S_g$  = Specific gravity of injected water

$$P_{max} = [0.883 - .433 (1.00)] 4496$$

$$P_{max} = 2023 \text{ psig}$$

Until such time as the permittee demonstrates that a fracture gradient other than 0.883 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure (**Pmax**) for this well will be 2023 psig.

- (3) The **plugging and abandonment plan and schematic**, submitted by your office, has been reviewed, and approved.

**Prior to commencing injection into this well**, permittee must fulfill permit condition Part II, C. 2. and have received **separate written authorization to inject by the Environmental Protection Agency**. In summary, these requirements for your newly permitted injection well are:

- (1) All conversion is complete and the permittee has submitted a completed **Well Rework Record (EPA Form 7520-12)**.
- (2) The **pore pressure has been determined**.
- (3) The well has successfully completed and passed a **mechanical integrity test (MIT)**; EPA form enclosed.

All other provisions and conditions of the permit remain as originally issued.

If you have any questions, please contact Mr. Chuck Williams at (303) 312-6625. Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing **MAIL CODE 8P2-W-GW**. Thank you for your continued cooperation.

Sincerely,



Kerrigan G. Clough  
Assistant Regional Administrator  
Office of Pollution Prevention,  
State and Tribal Assistance

Enclosure: EPA Form

cc: Mr. Ronald Wopsock, Chairman  
Uintah & Ouray Business Committee

Ms. Elaine Willie, Environmental Director  
Ute Indian Tribe

Norman Cambridge  
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka  
BLM - Vernal District Office

Mr. Gilbert Hunt  
State of Utah Natural Resources  
Division of Oil, Gas & Mining

# Mechanical Integrity Test Casing/Annulus Pressure Test

U.S. Environmental Protection Agency  
Underground Injection Control Program, UIC Implementation Section, 8WM-DW,  
999 18th Street, Suite 500, Denver, CO 80202-2466

EPA Witness: \_\_\_\_\_ Date    /    / 9 Time    am/pm  
Test Conducted By: \_\_\_\_\_  
Others Present: \_\_\_\_\_

Well Name _____			
Well Status for Test _____		Shut-In _____ Operating _____	
Field Name _____			
Location _____ qtr qtr; _____		Section; _____ Township; _____ Range _____	
Owner/Operator _____			

TUBING PRESSURE			
Initial	psig	psig	psig
End of Test	psig	psig	psig
CASING/TUBING ANNULUS PRESSURE			
Time	Test #1	Test #2	Test #3
0 min	psig	psig	psig
5			
10			
15			
20 min			
25			
30			
35			
40			
45 min			
Result(circle)	Pass      Fail	Pass      Fail	Pass      Fail

Volume of fluid added to annulus prior to test \_\_\_\_\_  
 Volume of fluid bled back from annulus at end of test: \_\_\_\_\_  
 Workover since last pressure test? ☐ Yes ☐ No Operator Repr. does not know ☒ Date \_\_\_\_\_

Signature of Witness: \_\_\_\_\_

Date:

4/1/98

**MINOR PERMIT MODIFICATION -- ROUTING SLIP**

TO			INIT	DATE
1.	ORIGINATOR <i>Chuck Williams</i>	8P2-W-GW	<i>CW</i>	4/1/98
2.	TECHNICAL REVIEW - <input type="checkbox"/> CT <input type="checkbox"/> PO	8P2-W-GW	<i>WPM</i>	4/1/98
3.	PROOF READ - <i>LAURA C.</i>	8P2-W-GW	<i>LC</i>	4/1/98
4.				
5.	DAVE HOGLE - CONCUR	8P2-W-GW	<i>DGH</i>	4/2/98
6.	STEVE TUBER - CONCUR	8P2-W	<i>ST</i>	4/2/98
7.	KERRY CLOUGH - SIGNATURE	8P2	<i>KC</i>	4/6/98
8.	ORIGINATOR - COPIES <i>CHUCK W.</i>	8P2-W-GW	<i>CW</i>	4/9
9.	<del>JACKIE</del> LEE - TRACKING	8P2-W-GW	<i>To Box</i>	4/9
10.	LAURA CLUTTS - MAIL		<i>LC</i>	4/13/98

WELL NAME: *Ute Tribal #30-15*PERMIT NUMBER: *UT 2736-04446*APPLICANT: *Petroglyph*

## Contents of Package

Left Side:

UIC Minor Modification SOP  
 UIC Program Tracking  
 Operating Conditions Checklist  
 Cover Letter (Concurrence)  
 Cover Letter (Reading File)

Right Side:

Cover Letter (Sign)  
 Minor Modification (~~Sign~~)

COMMENTS: *Add New Well to Area Permit UT 2736-00000*Originator: *Chuck Williams*

APR - 6 1998

Ref: 8P2-W-GW

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CEW  
8P2-W-GW  
4/1/98  
8P2-W-GW  
4/1/98  
8P2-W-GW  
4/1/98  
4/13/98 LG  
4/1/98 LG

4/2/98  
P2-W-GW

Tub 7/2/98  
P2-W

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Sincerely,

Original signed  
Kerrigan G. Clough  
Assistant Regional Administrator  
Office of Pollution Prevention,  
State & Tribal Assistance

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Assistant Regional Administrator  
Office of Pollution Prevention,  
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Ute Indian Tribe

Norman Cambridge  
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka  
BLM - Vernal District Office

Mr. Gilbert Hunt  
State of Utah Natural Resources  
Division of Oil, Gas & Mining

FCD: March 31, 1998, Chuck W., chuck

4/13/98 CW 3276C (Mte Tribal) #30-15)

**SENDER:**

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:  
**Ms. Kathy Turner**  
 Geology/Petroleum Engineering Technician  
 Petroglyph Operating Company, Inc.  
 P.O. Box 1839  
 Hutchinson, KS 67504-1839

4a. Article Number  
**P 213 403 777**

4b. Service Type  
☐ Registered ☒ Certified  
☐ Express Mail ☐ Insured  
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery  
**APR 15 1998**

5. Received By: (Print Name)  
**Kathy Turner**

6. Signature: (Addressee or Agent)  
**X Kathy Turner**

8. Addressee's Address (Only if requested and fee is paid)  
**APR 20 1998**

PS Form 3811, December 1994 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

P 213 403 777

4/13/98 CW 3276C

US Postal Service  
**Receipt for Certified Mail**  
 No Insurance Coverage Provided.  
 Do not use for International Mail (See reverse)

Sent to	<b>Ms. Kathy Turner</b>
Street & Number	<b>Geology/Petroleum Engineering Technician</b>
Post Office, State, & ZIP Code	<b>Petroglyph Operating Company, Inc.</b>
Postage	<b>P.O. Box 1839 \$</b>
Certified Fee	<b>Hutchinson, KS 67504-1839</b>
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	<b>\$</b>
Postmark or Date	

PS Form 3800, April 1995